Monday

1:30 pm - 2:45 pm	*Plenary : Proportional Reasoning- What Should be the Focus?*

Depending on whether this is done in the intro,we will remind participants that the theme is on responding to students, but that we will also spend time focusing on the mathematics of proportional reasoning and algebra to deepen their understanding so that they can better respond.

We will reassure participants who are returning that they will have a new experience but that those who are new will be able to follow.

Using completely different activities than last year, we will talk about what proportional reasoning is and isn't and how it connects to so many math situations/topics with which students deal. We don't have the specifics for those activities yet, but we will ensure that the segment is very interactive.

3:00 pm – 4:00 pm	*Responding to Students in the Moment*

We will have video and smartboard files of kids working on a question. We will stop video or the smartboard responses to talk about what we would do and give teachers time, of course, to talk about what they would do.

We will set a rich open question focused on proportional reasoning for participants to try.

Participants will work in triples. One will respond to the question; one will respond to that "student" and the other will record what is happening. We will either be one of the responders and we will talk about what we hear to the whole group.

Breakout to follow: ***(establish norms for collaborative inquiry at the beginning; practice responding to students in the moment; Use video tasks where we have created an important proportional reasoning question that is an open question and participants focus on how to respond to kids)***

Tuesday

8:30 am – 10:30 am	*Plenary (Building learning goals, consolidating questions and success criteria in PR)*

We will repeat the type of work we have done before on creating important learning goals, setting appropriate consolidating questions using big idea filters, but we will talk about building success criteria. We will talk about success criteria involving open questions as well as ones involving less open problems.

We will use student samples to help us build those success criteria. This will necessitate the gathering of specific student responses to a couple of items, probably one at a grade 5-6 level, one at a grade 7-8 level and one at a grade 9 or 10 level. <*students can help….co-constructing---ongoing---* >

Breakout to follow: (work on learning goals, success criteria and consolidation questions)

1:00- 2:30	***Plenary (Providing written feedback based on an understanding of student development)***

Here we will use the samples from the earlier plenary and focus more on how we would provide written feedback.

We will model using one of those samples.

Then we will ask participants to try it with another sample (in pairs) and share with yet another pair.

We might co-develop a checklist teachers could use for providing feedback but talk about the importance of specific feedback and not just generic feedback.

Breakout 1 to follow: ***practice on providing feedback- using written tasks we had collected; the focus is on making sure both generic and specific feedback are used; the focus is on how knowing the goal of the lesson affects the feedback given***

Breakout 2 to follow: ***practice on providing feedback- using written tasks we had collected; this time—several pairs respond and they focus on how they would converse with each other if they disagree with what the other has said or maybe this could be set up as a sort of "drama" piece)***

Wednesday <*Note—more time on plenary than originally proposed*>

8:30 am – 10:15 am	***Plenary (Working with struggling students- highlighting gap closing stuff on PR in gr 6 and 9 as models of a strategy)***

The focus of the plenary will be on the structure of the Gap Closing materials and why we think that this structure is particularly responsive to both struggling students and to a variety of teaching styles. One lesson in Grade 6 and one in

Grade 9 will be the focus to engage the broadest range of participants. We will share video clips of kids working on it and kid interviews as well as some of the research findings.

Breakout to follow: can have any of several components.

- Working through at least one more GC lesson(which we can suggest to facilitators) to really get an understanding of intent)
- Opportunities to share notions about the value of open questions rather than directed questions to support struggling students
- Opportunities to discuss specific types of feedback or approaches that do and do not build confidence in struggling students

Friday

9:45 am – 11:30 am	**Building High Quality Student and Teacher Discourse (perspectives of each of the plenary speakers)**	***1***

We will be keeping notes all week and this will inform our Friday session. We anticipate each of the four of us would talk maybe 10 minutes and the rest is the usual closing stuff.

Some suggested tasks for gathering student video or audio or written work on proportional reasoning (for in the moment videos- I want some that are working on bigger problems, but some that are quicker questions)

Listed below are just a few ideas to get us started. I haven't really done anything here to talk about when or in what situation these would be gathered—not sure we will be able to dictate this anyway.

Grades K-4

Quicker:

1) How might you fill in the blanks?

_____ is more than double ____.

2) <Provide 2 dimes, 4 nickels and 3 pennies, but scatter and mix them up>

Would you count the coins to see how much money there is?

Longer:

Aaron wants to buy a toy that costs 85¢[or switch to 45¢ for younger kids]. How many nickels would he need?

Grades 3-6

Quicker:

1) Which is closer to ½: 3/8 or 4/10? How do you know?
2) You have more than 20 markers. When you give them out in groups of 3, there is exactly one marker leftover. How many markers could there be?

Longer: 4 boxes of cookies costs $10. How much should 18 boxes cost?

5 – 8

Quicker:

1) A fraction is just slightly more than 2/3. What might it be?
2) Jacob says that every multiple of 6 is a multiple of 3, but that not every multiply of 3 is a multiple of 6. What do you think? Why?

Longer: <We provide a recipe for 6 dozen cookies.> How much of each ingredient do you need for 15 dozen cookies? You need to find a way to represent the amounts.

7 – 10

Quicker:

1) A number called A is 20% of a number called B. But A is 40% of C. What do you now about B and C?
2) You know that the number A is 40% of B. How would you find the number that is 35% of B?

Longer:

A lion’s heart beats 40 beats in 60 seconds.

How long would it take to beat 1 million times?

9 – 12

Quicker:

1) A salesman gets $75/hr + 3% commission on his sales.

If he doubles his sales, does he double his commission? Explain.

2) An arithmetic sequence grows really quickly. The tenth term is 8. What could the sequence formula be?

Longer:

If it takes 4 men 6 hours to repair a road, how long will it take 9 men to do the job if they work at the same rate?